OBSERVATIONS

Doctor M'Ilvaine
Present from
ON THE
the author

MILK SICKNESS,

SICK STOMACH, OR GASTRO ENTERITIS

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blood mingled with mucous, vitiated cystic bile, and occasionally, stercoraceous matter. The blood is produced from the rupturing of the minute ramifications of the venaportae in the interior coats of the alimentary canal, either by the violent mechanical action, in vomiting, or by the relaxation and debility of those coats. Under all, or nearly all, of the foregoing symptoms, with the palpebra half closed, folding his arms or pressing his hands on the region of the stomach, his knees drawn upward and his head bent downward on his breast, lies prostrate, without complaining of any thing except the burning sensation of his stomach, which he, in vain, endeavors to relieve by copious draughts of cold water. These he swallows with avidity, then falls back on his bed, for a few moments, then rises to vomit and falls back again a little relieved, for a time somewhat longer, during which he dreads to stir, to speak and almost to breathe, until he can refrain no longer, when he rises to replenish his draught, and repeats the routine as before. It is unnecessary to be very tenacious in fixing on the precise symptoms which distinguish the second from the third stage of the disease: it will be sufficient to observe, that by the operations above described, the patient, at length becomes exhausted, falls on his back, his vomiting is exchanged for *hiccough*, his head more and more retracted, when turned on his side, until he expires.— But, although hiccough is generally deemed symtomatic of *mortification*, in late stages of disease, it should be observed that, in this, it is not invariably a fatal symptom: for it occasionally appears in every stage, after the first few discharges. And I have succeeded in cases apparently past recovery, by happily producing catharsis and removing worms, which are very common in countries where the inhabitants subsist, in considerable part, on coarse and indigestible diet, a *samp hominy*, and coarsely ground Indian meal, little better than half cooked. I have seen it produced, by the patient forcing himself to swallow a mouthful or two, of some solid food, as bread, biscuit, &c., and have seen it alleviated by the exhibition of large doses of oil, from whence I am led to suspect that the sides of the stomach may have become collapsed into contact. It is unnecessary to add, that, when it does proceed from the death of some portion of the stomach, duodenum, &c., as is generally rendered certain by the presence of cold perspiration, it is, indeed the dying stage, and beyond our art.

The foregoing is an attempt to describe one variety, and

the most common of the milk-sickness; but there are others which ought not to be overlooked. There have been cases in which there was little or even no vomiting, and yet all the other symptoms and consequences, and others, both with and without vomiting, in which diarrhœa was the most troublesome symptom; owing, probably, to the diseased action being very extensive in the alimentary canal. But it is a law of the animal economy, that increased and diminished action alternate with each other; so that, if the sanative operations are inefficacious, or death of the part do not intervene, inflamation may supervene upon diminished action of a diseased organ. Thus it has happened, in this disease. The stomach, duodenum, or both together, in the early stages, labor under diminished action, so that any soft and bland aliment, as *mush, etc.*, cannot be endured, and is rejected, while harder and drier food, as bread made of the same meal may be quite agreeable. While the burning sensation becomes intense, and, especially, if there be a full and strong pulse, there may be observed a tenderness at the precordia, (pit of the stomach) and, at length, purulent matter is seen in the fluid discharged—the pulse in the meantime, diminishing in size, until it becomes wirey. Dissection has shown that the pus is produced from the interior coat of those organs, in the same manner as from the eye, in opthalmia—*sero hora nocte et inter sepulcrum.*

Dissections have indeed been too few and too much embarrassed, to add greatly to our knowledge of the pathology. Yet I cannot help thinking, they have been in some degree advantageous to me—they have invariably shown the interior of the stomach, duodenum, and sometimes other considerable portions of intestine, denuded of their mucous lining, the gall-bladder nearly empty, yet showing that its contents had been vitiated to a blackish green and even thickened, the jejunum from its inferior portion, upwards, even through the cavity of the stomach, containing traces of dark porraceous and grumous matters, in the interior of the former specks, as if injected with fresh looking blood, too florid to admit a suspicion of gangrene, and the rest of the viscera sound, except rather flaccid. The blood vessels on the interior surface considerably enlarged and full, about as in slight opthalmy—the omentum nearly obliterated. Cases of this description had all died from perfect exhaustion. The persons most liable to this disease, are, so far as I have observed, those within the years of puberty. If any below, and they are not a few, it is generally

less severe, and with any beyond that period, it is much more fatal.

Treatment, 1st. If the pulse be full, and, especially, if hard, I bleed, to relieve inflammatory symptoms, if present, to prevent their subsequent appearance, and to diminish the irritability of the mucular system. I have seldom known a case do well under such circumstances, if bleeding had been omitted.

2d. To re-place the ejected mucous, either by a substitute, or by restoring the secretion of it—calomel is clearly indicated in the latter, and oils and mucillages in the former. Both oils and calomel have not only done good, but cured the complaint. Some authors attribute the antispasmodic propertics of oils to their carbon. Some suppose, too, that, if they can produce ptyalism, they are sure to cure; but I have seen patients die, while the saliva was running from their mouths, which were highly affected. Others have said purge freely and you cure. But, tho' purging is indispensible, it is far from being universally efficacious (ie. it is not a certain remedy.) I have, however, known some to cure themselves, by resolutely swallowing large quantities of castor oil, bears-oil, etc., until at length it would be retained, after which, it would purge freely and bring complete relief. From a knowledge of this, I have raised the question, whether, in cases lacking resolution, the oil might not be sent down by means of a stomach pump, but have never yet had opportunity to try it. The experiment would be both simple and harmless; and, if it should succeed, any family residing in a vicinity where the sickness is prevalent, would only need supply themselves with castor oil, or lacking this, melted lard, and a flexible catheter, of 50 cents cost, to which, tie a bladder like a common *glyster bag*. The pipe being passed without the wire, along the roof of the mouth toward one side, thro' the back aperture, and it will pass into the stomach with ease. No danger of going too far, for if you should reach the bottom of the stomach, withdraw a little and squeeze the bag, so as to send down the contents, which may be either oil, melted lard, or fat broth, all which have done good; and, with reasonable care, there can be no danger from any repetitions, if need be. But it should be a rule in every exhibition of medicine in this disease, that it be performed as soon as possible after every vomiting.

3d. If possible to produce, in the diseased organs, action incompatible with the diseased action. For no organ, nor

combination of organs, can, at the same time, sustain two different kinds of action. I have already observed, that castor oil, etc. and broths, sometimes effect this, and, it is not improbable that, at least the oils, always would, if exhibited in sufficient quantity, and it is obvious that calomel is calculated to restore the secretion of mucous, etc. But it sometimes acts only on the salivary glands, and hence, after salivation without benefit. To render the desired effect more sure (and I have found much benefit in the practice) of giving calomel, combined with oil, so as to exhibit from 12 to 20 grains at each dose, with the addition 15 drops of laudanum, hourly for several hours, if retained, or directly after every vomiting, if not. These doses generally find their way thro', and thus I have happily succeeded in many cases. The gustatory organs in this disease, often become exquisitely sensitive, so that nothing can be given, but in minute doses. I have, therefore, frequently exhibited the following pill: Aloes 1 grain, calomel 1 grain, opium $\frac{1}{4}$ grain, made into a pill with a little mucillage of gum arabic, given hourly, or directly after every vomiting. But, with a view to producing incompatible action, I have succeeded much to my satisfaction, in or among a number of other cases of equally pleasing result, I dissolved six grains of emetic tartar in twelve table spoonsfull of boiling water. As soon as cooled, I gave, immediately after puking, one; and by the time I had given four, the burning was much abated, and he vomited less frequent. Perspiration began to be quite free. I gave another and he vomited in five minutes after. I then gave some gruel, or broth very warm and palatably salted. He vomited no more. Yet I continued with half spoonfulls hourly, until catharsis followed freely, when every symptom, except debility, disappeared; for which tonics were indicated and given. Here was an instance, not only of producing incompatible action, but of the valuable property of the medicine in allaying irritation.

In districts where the *Milk Sickness* prevails, we often see the same characteristic burning, costiveness and pertinaceous vomiting, combined with other diseases, particularly the common remittents and intermittents of summer and autumn; and the physician finds it necessary to treat these with an eye to the disease of which we are treating. Along with the remedies above stated, I have used the bath by steam, by immersion and by ablution; as also, cold baths by showring, immersion and ablution, but to little, or no benefit. As nutriment, I have often used starch. The very idea of nutriment is distressing

to the patient, and the starch may be beaten up with cold water and swallowed, unknown to the patient, and with little inconvenience. Blisters and mustard applications on the abdomen have, sometimes, seemed to do good, but like every other form of treatment, have often failed. I should have accepted the tartarite treatment, which, with me, has not failed, as yet. But this, too, if too late, or injudiciously administered, may, also fail, tho' it is certainly a most valuable remedy.

CAUSES.

Except the cholera, there is, perhaps, no disease which has been so much the subject of gossip tale and quackish misrepresentation and prescription as this. And it is much to be regretted, that, even intelligent writers, on the *Milk Sickness* in man, and the trembles in cattle, have been much more careful to record these, than carefully to note such facts as those, on which alone the medical man should depend. The chief question seems to be, are the cause, or causes, of vegetable or of mineral origin, and are there any others concomitants? In answer to these, I will state a few facts:

1st. The disease appears to be wholly confined to particular districts, the bounds of which, may be as accurately defined as those of farms.

2d. These districts abound in *licks*, (or saline springs) many of which emit a more than ordinary quantity of sulphuretted hydrogen gas.

3d. The prevalence of the disease is over a larger or smaller extent, according to the *fluency* of the natural springs.—In extreme drought, it is little, if at all heard of, and then only in the lowest levels. But, when the springs have risen a little, it is then, only, in levels somewhat higher, when more, in levels still higher, and when the springs are very full, it is only found on the highest, or common level of the country, where it prevails until the springs here are completely full and overflowing, when it disappears, receding in reversed order, from the highest to the lowest.

4th. It is alledged to be most prevalent in autumn and beginning of winter, often in summer, but never in spring. This, however, seems to depend on whether the season has, as usual, been wet or dry. In the latter case, it is as likely to prevail in spring as any other season.

5th. The spring waters used by the inhabitants abound in earthy and other minerals, more considerably than those of other districts where the disease has never prevailed.

6th. Those families most afflicted with this disease are

those who use the waters of such springs and those of shallow wells, carelessly cleaned, and who suffer their cattle to graze in the woods, while those who use the waters of deep and clean wells, and keep their cattle enclosed in pastures, watering them at their wells, or at large running streams, have no trouble with *sick stomach.* For which reason it is much less prevalent now than formerly.

7th. It has been attributed to certain vines, shrubs and herbs. But, besides that scarcely two are found to agree on the particular plant, there is not a tree nor vine nor herb growing in those districts, subject to the complaint, which I am acquainted in, that does not grow here (except a few, known to be perfectly innoxious) where the disease was never known, within seven miles.

8th. Sir Humphrey Davy, and an older writer, whose name does not, at present, occur to me, have said that the people of those districts where gypsum abounds, are never healthy. (See his agricultural Chemistry) What disease, or diseases, the great chemist had reference to, we are not informed, * but it is certain that the interstrata, (soap-stone, so called) in many places, in these *sick districts*, have been disintegrated by springs, which have filled the mud, so formed, with granules and scales of sulphate of lime, which also abounds in all our waters, but more especially in those of such districts, as well as in the lime-stone, the lime of which *sets* too rapidly for the convenience of the mason, in brick-laying.

9th. I know of farms, on each of which there is but a single field with a spring or rill running thro' it, in which, if horned-cattle, horses or hogs are confined, they die, of what is called the *trembles*, and the people who happen to use the milk, or the flesh of them, which, so confined, even when they show, on a slight view, no symptoms of the disease, are apt, and almost certain to become affected and even to die too; while, if the beasts are pastured, only in adjoining fields, or if these rills are dry, they are as healthy as other animals, elsewhere.

10th. It has been doubted, by some, whether the disease, in man, is ever taken from the milk, or the flesh of these sick animals. But the fact that it is among the earliest enactments of civilized nations, to make the vending of the flesh of diseased animals a penal offence, should so far set this question at rest, as to suppose it, at least possible, while those who live in the *midst of this death*, never doubt it. The two fol-

* I wrote to that learned and enlightened chemist for an explanation; but my letter reached him too late. He died just after it reached him!!!

lowing cases show undeniably, that very dangerous diseases are communicable to man, from diseased horned cattle. A farmer not many miles from me, had several of his beasts down with some disease (much, however, resembling the *trembles*, yet different) of which they died. Among them were two fine steers, very fat, which he skinned and preserved the tallow; in doing which he made a slight wound with his knife on one of his fingers and two punctures from bones, one on each of two others. The wound soon became very painful, and turned black, which blackened, or necrocized surface being made to shed off, would constantly renew, until nearly all the flesh of the finger was gone. The punctures each assumed the appearance, exactly of kine-pock, excepting that the bases were unaccountably hard. These also turned black and sloughed out in the same manner as the wound; and it was not until after considerable constitutional excitement, from internal remedies, that they put on a healing appearance. His son, a young man, assisted and took away the hides; in doing which, they came in contact with some briar-scratches on his wrists and ankles; every one of which took the same appearance, and went thro' the same course as the punctures on his father's fingers, and were cured in the same manner.

A young man and his wife attended to the skinning of a fat cow, that had died under circumstances a little similar. On opening the body, a most offensive stench poured forth which sickened them both. They, however, completed their work and went home; but both of them sickened and died in the course of two or three days. These cases happened in different neighborhoods, some miles apart, and not within, nor very contiguous to a *sick stomach* district. The hides and flesh of these animals appeared full of livid spots, as of extravasated blood; but I do not know that this is the case with those that die from the poison received in those districts. In fact I know that it is not, in all, if in any, and I have never heard of any accident of the kind above related, from skinning, etc. among those people who live there. I, therefore, believe the diseases are widely different. I have good authority too for believing that some persons after carefully abstaining from the milk, flesh, etc. of animals so diseased for many months, have suffered from the disease in question, tho' they could not be even suspected of eating the herb, or gnawing the vine, or shrub, accused of being the deleterious cause of the disease. I confess I should be loth to eat the butter and the cheese, made in parts of the vallies of Tanner's Creek and the Whitewater,

and their tributaries, tho' I have often eaten both of excellent quality, made in the very worst of those places. Yet, to my certain knowledge, the beef, the butter, and the cheese are carried to Cincinnati and other towns, where the *Milk Sickness* is never, I believe, known. This has led to the suspicion of Malaria, an Italian doctrine. To this suggestion I do not subscribe, tho' the presence of sulphuretted hydrogen, a gas inimical to life, is quite sensible in the air. But the quantity is too small to produce such an effect. I recollect a spring which supplied water for domestic use, in a house hard by. The family there suffered much from sick stomach and removed. The house being vacant, a travelling family put up in it, as a temporary residence, until they might find a better home. They had no milk-cows; they used the spring, several of them sickened, and two of them died in a short time from the disease. The spring was therefore, by my advice, shut up or filled, and I have heard of no case of that complaint there since.

If the doctrine of vegetable origin were true, the disease should be found in every place where those plants grow; yet they grow here where milk sickness was never known, nor is it known at all beyond the natural limits of the districts, which are well known by every intelligent and observing person in their vicinity. It has been noted above, that those waters contain sulphate of lime. They also contain sulphate of soda, sulphate of magnesia, muriate of soda, muriate of magnesia, and muriate of lime, also muriate of iron, and sometimes sulphate of iron. But with the best and most delicate tests, I have not discovered a particle of copper, nor lead, nor arsenic. And were either, or all of these present, in dangerous dose, the effect would be instantaneous; the water would be rejected. But this seems not to be the case in the disease in question. The effect, whatever be the cause, requires some days for development, and many escape for months. Every one of the combinations I have enumerated, is capable of producing deleterious effects on the stomach, if exhibited in larger doses, and the oft repeated small dose may produce even more lasting and serious effect. Besides which, we know that some medicines operate on brutes, which have little effect on men (as crude antimony) while we know so little of the modus operandi. The suggestion of Davy deserves consideration; but while we disprove the vegetable theory, we prove the mineral origin, by its being confined to certain districts, and that the exclusion of certain springs and

rills prevents the disease, most effectually. It may possibly be replied that the same exclusion prevents the cattle from obtaining the herb; But granting the poisonous quality of the plant, would the cows and horses eat it? I trow not, unless compelled, which has never been done, except in some experiment made to prove what the experimenter believed before. But it is denied that the salutary effect comes from shutting the cattle from this or that grass or shrub; for the same herbs, vines and shrubs grow here, where the disease is unknown, and the same is observable of other places. I might have mentioned several localities and names, but it is unnecessary, for most of the facts set forth must be familiar to every physician who has had experience in the disease, as well as many other persons of observation, and all may be verified with little expense or trouble.

THE END.